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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/954,864	09/17/2001	Satyadev R. Patel	P68-US	8736
26148	7590	03/24/2004	EXAMINER	
REFLECTIVITY, INC. 350 POTRERO AVENUE SUNNYVALE, CA 94085			OLSEN, ALLAN W	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/954,864

Applicant(s)

PATEL ET AL.

Examiner

Allan Olsen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-128 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 84-121 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because each of the reference characters 14, 15, 16, 17, 18, 19, 20, 21, 23, and 24 have been used to designate different items in the drawings. For example, in figure 1, "23" refers to a valve, whereas in figure 2, "23" refers to a pump and in figure 4, "23" refers to chamber. Furthermore, while reference characters 22 and 25-28 are consistently used to designate valves, there is a question as to whether a particular reference character consistently refers to the same valve, (with respect to placement and valve type) from figure to figure. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-3, 6, 10-14, 16, 21, 24-27, 41-43, 50-54, 61, 64-67, 83 and 124-126 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 4,213,818 issued to Lemons et al. (hereinafter, Lemons).**

Lemons teaches using vapor phase etchants to etch various silicon comprising materials. Lemons teaches etching rates as low as 0.3  $\mu\text{m/hr}$  (fig.12). Lemons teaches etching while maintaining a chamber pressure of up to 10 torr (column 3, lines 21-23).

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Lemons teaches etching a silicon containing material preferentially with respect to another silicon containing material (figure 13; column 5, lines 17-20; column 7, lines 28-65). Lemons teaches etching silicon that has been doped by ion implantation (column 4, lines 31-33, column 11, lines 5-6). Lemons teaches etching a silicon material having more than one overlying layer deposited thereupon, wherein the overlying materials comprise a different silicon material and a metal layer (column 4, line 58 – column 6, line 2; column 9, line 50 – column 10, line 46).

**Claims 1-3, 5, 21, 22 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent Application Publication 2002/0204821 of Bazylenko et al. (hereinafter, Bazylenko).**

Bazylenko teaches using vapor phase etchants to etch various silicon comprising materials. Bazylenko teaches in Fig 2a an etching rate for SiO<sub>2</sub> of 1200 Å/min (7.2 μm/hr) with lower etch rates for a-Si. Bazylenko teaches a-Si is formed by PECVD (paragraph [0026]). Bazylenko teaches etching a silicon containing material preferentially with respect to another silicon containing material (figures 12a, 5a-5c; paragraphs [0017], [0030], [0036]).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 15, 17, 18-20, 37-40, 55-60 and 77-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemons.**

The above noted teachings of Lemons are herein relied upon.

Lemons does not teach that the doped polysilicon is doped with a dopant selected from PH<sub>3</sub>, P<sub>2</sub>H<sub>5</sub>, B<sub>2</sub>H<sub>5</sub> and BCl<sub>3</sub>. Lemons does not teach that the dopant is added during the deposition of the silicon. Lemons does not teach that the silicon is PECVD LPCVD or sputtered silicon.

It would have been obvious to one skilled in the art to use the claimed dopants and types of silicon because Lemons is directed to the fabrication of semiconductor devices and the claimed materials are standard in the semiconductor fabrication industry.

**Claims 122, 123, 127 and 128 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bazylenko.**

The above noted teachings of Bazylenko are herein relied upon. In addition, it is noted that Bazylenko teaches the method may be used for MEMS fabrication (paragraph [0068]).

Bazylenko does not teach the typical MEMS fabrication steps of: providing a sacrificial layer; depositing a structural layer over the sacrificial layer; and, releasing the MEMS structural layer by removing the sacrificial layer.

It would have been obvious for one skilled in the art to carry out the steps as claimed when using Bazylenko's method for a MEMS fabrication process because the because the claimed steps are representative of classic MEMS methodology.

### ***Allowable Subject Matter***

Claims 84-121 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allan Olsen whose telephone number is 571-272-1441. The examiner can normally be reached on M-F 1-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Mills can be reached on 571-272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Allan Olsen', with a stylized flourish at the end.

Allan Olsen  
Primary Examiner  
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